

Innovation and Research Needs, FY 17

SPR	Area	Idea or Need	INDOT Businesss Owner	INDOT Project Advisor	INDOT Deputy Commissioner	INDOT Potential Study Advisory Committee Members	Proposal Status
3710	Pavements, Materials, Construction & Geotechnical	Correlation between Resilience Modulus (MR) of Soil, Light Weight Deflectometer and Falling Weight Deflectometer (FWD)	Athar Khan	Tommy Nantung	Jim Poturalski	Kumar Dave, Tom Duncan, Yigong Ji	Approved
3715	Structural, Hydraulics & Environmental	Expansion of S-BRITE Project	Anne Rearick	Tim Wells	Jim Poturalski		Potential for Approval
3827	Asset Management & Performance Management	Strategic Scheduling of Infrastructure Maintenance and Rehabilitation Funding	David Holtz & Anne Rearick	Samy Noureldin	Jim Poturalski		Potential for Approval
3857	Pavements, Materials, Construction & Geotechnical	Assessment of Pipe Fill Height	Mike Prather	Tommy Nantung	Jim Poturalski		Approved
3912	Asset Management & Performance Management	Economic Development Impact of Corridor Improvements	Roy Nunnally	Samy Noureldin	Jim Poturalski	Joyce Newland, Emmanuel Nsonwu, Frank Baukert, Korey Chu, Pamela Fisher, Indraneel Kumar, Sallie Fahey, Jerry Bridges, Dan Avery, Jay Mitchell	Approved

3947	Pavements, Materials, Construction & Geotechnical	Precast Slab Pilot Implementation	David Holtz	Tommy Nantung	Jim Poturalski	David Holtz	Approved
4003	Pavements, Materials, Construction & Geotechnical	Improving the quality of Concrete for INDOT Projects (Concrete curing, patching, and trial batches practices).	Mike Nelson	Tommy Nantung	Jim Poturalski	Mike Nelson, Tony Zander, Greg Pankow	Approved subcontract. Waiting on a portion of the proposal. Principal Investigator is still developing the proposal
4004	Pavements, Materials, Construction & Geotechnical	Development of Subgrade Stabilization and Slab Undersealing Solutions for PCC Pavements Restoration and Repairs	Mike Prathers	Richard Ji	Jim Poturalski	Mike Prather	Approved
4042	Pavements, Materials, Construction & Geotechnical	Quantifying Asphalt Pavement Performance Loss due to Binder Deficiency in the Design Mix	Matt Beeson	Tommy Nantung	Bob Tally	John Leckie, Dave Holtz	Approved
4043	Pavements, Materials, Construction & Geotechnical	Investigation of Slag Aggregate in the Asphalt Pavement	Matt Beeson	Tommy Nantung	Bob Tally	Matt Beeson, Tommy Nantung	Approved
4044	Asset Management & Performance Management	Evaluating Opportunities to Enhance the Hoosier State Train Ridership through a Survey of Riders' Opinions and an Assessment of Access to the Line	Venetta Keefe	Samy Noureldin	Jim Poturalski	Larry Buckel , Melody Coleman, Mark Newman	Approved
4100	Pavements, Materials, Construction & Geotechnical	Maximum Allowable Deflection by Light Weight Deflectometer (LWD) and its calibration and verification.	Joe Novak	Samy Noureldin	Ryan Gallagher	Nayyar Zia Siddiki, Matt Beeson	Approved

4101	Pavements, Materials, Construction & Geotechnical	Pavement Materials Testing and Testing Intervals Confidence in Pavement	Dave Holtz and Matt Beeson	Tommy Nantung	Jim Poturalski	Kurt Sommer, Gregg Pankow, Tom Duncan, Andrew Pangallo	Potential for Approval
4102	Traffic Mobility & Safety	Building, Evaluating and Improving LiDAR-Based Traffic Scanner Prototypes for Implementation to INDOT Practice - Phase II	Mike Holowaty	Shuo Li	Jim Poturalski	Alan Holderread, Jim Sturdevant, Hillary Lowther, Dana Plattner	Approved
4103	Traffic Mobility & Safety	Developing the Collision Diagram Builder -- Phase II	Mike Holowaty	Shuo Li	Jim Poturalski	Taylor Ruble, George Kopcha, Lawrence Ozobu, Damon Brown, Mike Eubank	Approved
4104	Traffic Mobility & Safety	Predicting Impact to Traffic Safety and Mobility of Change in Speed Limits for Indiana Interstates	Brad Steckler	Shuo Li	Jim Poturalski	Ed Cox, Terry Bough, Tom Ford, Luis Laracuente, Gary Bowser	Approved
4108	Pavements, Materials, Construction & Geotechnical	Development of Comprehensive CPT-Based Geotechnical Design Manual	Athar Khan	Samy Noureldin	Jim Poturalski	Athar Khan, Nayyar Zia Siddiki Mir Zaheer Amir Turk	Potential for Approval
4109	Pavements, Materials, Construction & Geotechnical	Improvement of Stiffness and Strength of Backfill Soils through Optimization of Compaction Procedures and Specifications	Athar Khan	Samy Noureldin	Jim Poturalski	Athar Khan, Aamir Turk	Potential for Approval
4110	Pavements, Materials, Construction & Geotechnical	Synthesis: Outsourcing Lab Testing/Construction Oversight, Minimal Cost, Maximum Value	Rick Powers	Tommy Nantung	Rick Powers	John Leckie, Mark Miller, Greg Pankow	Potential for Approval

4111	Pavements, Materials, Construction & Geotechnical	Subgrade Stabilization Alternative (\$ 75,000)	Dave Holtz	Tommy Nantung	Jim Poturalski	Athar Khan, Nayyar Zia Siddiki	Potential for Approval
4112	Pavements, Materials, Construction & Geotechnical	Patching of Composite Pavement and other Types	Mark Miller and/or John Leckie	Tommy Nantung	Ryan Gallagher	Mark Miller, Dave Holtz, John Leckie, Todd Shields	Potential for Approval
4113	Pavements, Materials, Construction & Geotechnical	Friction Performance of HMA compacted mixtures	Matt Beeson	Jusang Lee	Ryan Gallagher	Matt Beeson, Kurt Sommer	Potential for Approval
4114	Pavements, Materials, Construction & Geotechnical	Balanced Mix Design away from Asphalt Volumetric	Matt Beeson	Jusang Lee	Ryan Gallagher	Matt Beeson, Kurt Sommer,	Potential for Approval
4115	Pavements, Materials, Construction & Geotechnical	Delta Tc in Multiple Stress Creep and Recovery (MSCR) Test	Matt Beeson	Jusang Lee	Ryan Gallagher	Matt Beeson, Nathan Ahwad	Potential for Approval
4116	Pavements, Materials, Construction & Geotechnical	Constructability of Underdrains/Triggers for use of Geotextiles/Performance of #8 and #53 Aggregates	Dave Holtz and/or Mark Miller	Tommy Nantung	Jim Poturalski	Dave Holtz, Mark Miller, Nayyar Zia Siddiki,	Potential for Approval
4117	Structural, Hydraulics & Environmental	Evaluation of Epoxy Injection as a Bridge Deck Maintenance Treatment	Mick Brinkerhoff	Tim Wells	Ryan Gallagher	Frank Sailer, Drew Storey	Potential for Approval
4118	Structural, Hydraulics & Environmental	Investigation of the Use of Buried Structures as a Life-Cycle Cost Reduction Strategy on INDOT Roadways	Mick Brinkerhoff	Tim Wells	Ryan Gallagher		Potential for Approval
4119	Structural, Hydraulics & Environmental	NDT Bridge Deck Digital Image Correlation	Randy Strain	Tim Wells	Jim Poturalski		Potential for Approval
4120	Structural, Hydraulics & Environmental	Load Rating Bridge Structures Built With Previous Design Codes	Jeremy Hunter	Tim Wells	Jim Poturalski		Potential for Approval
4121	Structural, Hydraulics & Environmental	Pack Rust Identification and Mitigation Strategies for Steel Bridges	Stephanie Wagner	Tim Wells	Jim Poturalski		Potential for Approval

4122	Structural, Hydraulics & Environmental	Carbon Fiber Wrap Usage As A Pre-Stressed Concrete Beam Strengthening Treatment	Jeremy Hunter	Tim Wells	Jim Poturalski		Potential for Approval
4123	TMS-3	Strategic and Tactical Guidance for the Connected and Autonomous Vehicle Future	Dave Boruff	Shuo Li	Jim Poturalski		Potential for Approval
4124	Highway Maintenance	Implementation of LEAN business processes for INDOT Maintenance(training and tracking process improvements)	Drew Storey and Bryan Donze	Tim Wells	Ryan Gallagher		Potential for Approval
	Pavements, Materials, Construction & Geotechnical	Bridge Approaches, Settlement and Smoothness. Design and Construction of Bridge Approaches	Joe Novak	Tommy Nantung	Ryan Gallagher		
	Highway Maintenance	Improved technology for small culvert inspection & assessment	Bryan Donze	Tim Wells	Ryan Gallagher		
	Highway Maintenance	Heated Bridge Technology	Chad Leggett	Contact Person - Derek Weinberg, Samy Noureldin	Ryan Gallagher		
	Structural, Hydraulics & Environmental	Time-lapse construction video for the first Routine Rapid Bridge Renewal project (Des. No. 1006343 - I-70 over SR 121)	Jeremy Hunter	Tim Wells	Jim Poturalski		
	Asset Management & Performance Management	Incorporating wider economic impact and economic resilience metrics into INDOT's transportation decision-making	Roy Nunnally	Samy Noureldin	Jim Poturalski		
	Asset Management & Performance Management	Road maintenance scheduling with network considerations	Louis Feagans & Mark Miller	Samy Noureldin	Jim Poturalski		
	Traffic Mobility & Safety	Energy Harvesting on INDOT Right-of-Way	Brad Steckler	Tim Wells	Jim Poturalski		
	Traffic Mobility & Safety	Pavement Marking Durability and Wet-Weather Performance	Brad Steckler	Tim Wells	Jim Poturalski		

	Traffic Mobility & Safety	Simulating Road and Traffic Forgiveness	Brad Steckler	Tim Wells	Jim Poturalski		
	Traffic Mobility & Safety	Safety Performance of Barrier End Treatments, Cushions and Impact Attenuators	Brad Steckler	Shuo Li	Jim Poturalski		
	Traffic Mobility & Safety	Solar Energy as Power Source for Traffic Signals	Brad Steckler	Tim Wells	Jim Poturalski		
	Traffic Mobility & Safety	Analysis Methods for Systemic Safety Treatments	Brad Steckler	Shuo Li	Jim Poturalski		